

Appl. No : 10/646,930 Confirmation No.: 1597
Applicant : Legario et al
Filed : August 25, 2003
Title : STORAGE STABLE ANFO EXPLOSIVE COMPOSITIONS
CONTAINING CHEMICAL COUPLING AGENTS AND METHOD FOR
PRODUCING SAME
TC./A.U. : 1793
Examiner : Aileen B. Felton

Docket No. : 6826-195/PMdC
Customer No. : 001059

BY ELECTRONIC FILING

Mail Stop AF
Honorable Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia, 22313-1450

REASONS FOR PRE-APPEAL BRIEF REQUEST

Madam:

The present letter is a request and reasons for review of the final rejection in the office action of July 20, 2010 of the above-identified patent application. Applicant is also simultaneously submitting a request for a two-month extension of time.

Reasons begin on page 2 of this paper.

REASONS

The applicant has concurrently filed a request for a two-month extension of time. Please charge our deposit account number 02-2095 in the amount of \$490.00 for the extension of time fee. Please also charge any additional fees that may be required, or credit any overpayment, to our deposit account.

Reasons for Requesting Pre-Appeal

The Examiner has rejected claims 31, 33, 35, 36, 38, 43, 44, 48, 49, 51, 53 and 56 under 35 U.S.C. §103(a) as being obvious in light of Kelley (U.S. Patent No. 5,527,498), further in view of Baker (U.S. Patent No. 4,595,430). In particular, the Examiner stated that

"Kelley discloses an ANFO explosive mixed by various methods for use in boreholes that comprises diesel fuel with a surfactant and ammonium nitrate."

The Examiner further stated that

"Baker teaches that it is known to replace a portion of ammonium nitrate with an additive such as epoxidized soybean oil in an ANFO type blasting composition." (emphasis added)

The Examiner stated that

"It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the epoxidized soybean oil as taught by Baker since Baker suggests that it is a known additive to replace a portion of ammonium nitrate in an ANFO type blasting composition and since Kelley relates to ANFO type blasting composition that use ammonium nitrate". (emphasis added)

For the reasons that follow, the Applicant respectfully disagrees with the Examiner's rejection and submits that the Examiner has mischaracterized the teachings of Baker and has not provided any basis for combining the references.

The Applicant respectfully submits Baker does not disclose ANFO type explosive compositions, and therefore, there is no suggestion in Baker to replace a portion of ammonium nitrate in an ANFO type blasting composition. Accordingly, the Applicant

submits that the Examiner bases the objection on a clear factual error in the interpretation of the prior art. As a result of the Examiner's factual error, the Applicant submits that the Examiner has made a clear legal error by characterizing Kelley and Baker as analogous prior art, contrary to Section 2141.01(a)(I) of the Manual of Patent Examining Procedure (MPEP). Accordingly, the Applicant requests a review of this final rejection.

1. Baker is not directed to an ANFO explosive

The Applicant respectfully submits that Baker is not directed to ammonium nitrate fuel oil (ANFO) explosives. On the contrary, Baker is directed to dynamite explosives, which significantly differ from ANFO explosives. In fact, Baker refers to the distinction between dynamite and ANFO explosives, where at Column 1, lines 21-41, the inventor states:

Dynamite is a hazardous material, both to manufacture and use. The hazards involved in utilizing dynamite result from its sensitivity. In the explosives art, sensitivity is the relative ease with which a particular explosive may be detonated by a particular impulse, for example, impact, explosion, fire or friction. To lessen the hazard of accidental initiation, the widespread use of ANFO became common in the industry. ANFO is ammonium nitrate fuel oil mixture and is relatively insensitive to detonation except by the use of a booster charge... However, there continue to be many applications where there is no substitute for dynamite. Dynamite has several advantages over ANFO, water gels or emulsions, such as, reliability and energy, which render it very useful. Thus, dynamite continues to be manufactured and sold in large quantities. [emphasis added]

Accordingly, Baker clearly recognizes that ANFO are a particular type of explosive composition and that these are different from dynamite.

ANFO type explosives generally contain ammonium nitrate and an organic liquid fuel oil in a ratio of 94% AN to 6% oil (see, for example, US Patent No. 6,761,781 to Lawrence), wherein the fuel oil is coated on the AN particles. This is a pure physical mixture. On the other hand, dynamite is a mixture of nitroglycerin and/or ethylene glycol dinitrate along with various nitrate salts and carbonaceous absorbants. (Baker column 1, lines 12-15). Dynamite may be made by impregnating an inert, absorbent substance

with nitroglycerin or ammonium nitrate mixed with a combustible substance. Dynamite is a set product.

Accordingly, while both dynamite and ANFO may use ammonium nitrate as an ingredient, they are substantially different explosive compositions.

2. ANFO and dynamite have different problems.

As stated in Baker, Column 1, lines 42-47:

“The two greatest hazards associated with dynamite usage are: (1) impact and friction sensitivity, and (2) a fume generation.

An objective of Baker's invention is to provide dynamite type explosives that contain novel desensitizers to lessen the impact sensitivity of the dynamite. Baker demonstrated that epoxidized soybean oil reduced the impact sensitivity of the dynamite, while it also excessively reduced the air gap sensitivity (see Table II of Baker).

In contrast, the embodiment claimed in claim 31 of this application is a “method for reducing oil segregation in an ANFO explosive composition”. As set out in paragraph [004]:

“A problem that has been encountered with prior art high density ANFO explosive compositions is that the fuel oil tends to separate from the ammonium nitrate during the time that the explosive composition is stored in the borehole awaiting detonation. If the oil separates from the ammonium nitrate, the explosive composition may deflagrate or it may fail to explode.”

In accordance with the embodiment of claim 31, the chemical coupling agent is selected and present in an amount so that the explosive composition has an oil segregation factor sufficiently low to render the explosive composition detonatable. Accordingly, ANFO explosives may suffer from performance issues related to the separation of the oil from the AN, while dynamite suffers from impact sensitivity and fume generation (see Baker, Column 1, lines 42-45).

Baker teaches that epoxidized soybean oil may be used to desensitize dynamite. However, the Examiner has not provided any evidence that there is a need to desensitize ANFO explosive compositions. In fact, the embodiment of claim 31 is directed to reducing the desensitization of ANFO explosive compositions by reducing the segregation of oil from the AN particles. Therefore, the embodiment of claim 31 is effectively directed at the opposite problem of Baker.


Further, while Baker may teach that epoxidized soybean oil is an additive to replace a portion of ammonium nitrate in dynamite, there is no reason a person skilled in the art would use epoxidized soybean oil as an additive to the oil used in an ANFO explosive composition as suggested by the Examiner. There is absolutely no teaching or suggestion in Baker for the use of epoxidized soybean oil in an ANFO type explosive composition, let alone to reduce oil segregation in an ANFO explosive composition.

Accordingly, the Applicant respectfully submits that the Examiner has made a clear factual error in the interpretation and application of the cited prior art. In view of the foregoing, the Applicant respectfully requests a review of the Examiner's final rejection.

The Commissioner is hereby authorized to charge any fee (including any claim fee), which may be required to our Deposit Account No. 02-2095.

Respectfully submitted,

BERESKIN & PARR LLP/S.E.N.C.R.L., s.r.l.
Agent for the Applicant

By 

Michael Fewnick
Reg. No. 61,773
BERESKIN & PARR LLP/S.E.N.C.R.L., s.r.l.
4000 - 40 King Street West
Toronto, Ontario
Canada M5H 3Y2
Tel: 416-957-1665 Fax: 416-361-1398